

REMARKS/ARGUMENTS

Re-examination and favorable reconsideration in light of the following comments are respectfully requested.

Claims 1 - 14 are pending in the application. Currently, all claims stand rejected.

In the office action mailed November 12, 2009, claims 1 - 14 were rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 2,663,185 to Broschke in view of U.S. Patent No. 3,781,020 to Batsch et al., U.S. Patent No. 5,785,039 to Kobayashi and Applicant's admitted prior art from the Declaration of Mr. Dilip Shah filed on February 9, 2009 and U.S. Patent No. 4,560,853 to Ziegel.

The foregoing rejection is traversed by the instant response.

Claim 1 is directed to an indenting tool comprising: a shank having a tip end and a diamond stone affixed to said tip end by a braze material, which diamond stone forms a point of the tool and which diamond stone is mounted to said tip end within 8 degrees of a <17,12,24> direction.

Independent claim 13 is directed to an indenting tool comprising a shank having an end, a diamond stone secured to the end in a wear resistant orientation, and said wear resistant orientation being within 8 degrees of a <17, 12, 24> direction.

Independent claim 14 is directed to a method of making an indenting tool, comprising the steps of: providing a shank having an end; providing a distant stone; positioning said

diamond stone in a wear resistant orientation; securing said diamond stone to said end; and said positioning step comprising positioning said diamond stone in a wear resistant orientation of within 8 degrees of a <17,12,24> direction.

Claims 1, 13, and 14 are each allowable because the Examiner has not made out of a *prima facie* case of obviousness primarily due to the fact that the Examiner has failed to recognize that there are an infinite number of vectors within any diamond and that the prior art contains nothing which would lead one of ordinary skill in the art to arrive at an orientation within 8 degrees of a <17, 12, 24> direction. In fact, the prior art clearly teaches away from using an orientation within 8 degrees of a <17, 12, 24> direction.

(a) Applicable Case Law

(1) Obviousness

Obviousness requires a suggestion of all elements in a claim (*CMFT, Inc. v. Yieldup Int'l Corp.*, 349 F.3d 1333, 1342 (Fed. Cir. 2003)) and "a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does." *KSR Int'l Co. v. Teleflex, Inc.*, 127 S.Ct. 1727, 1741 (2007); also see *Ex parte Alexander*, 86 USPQ2d 1120, 1121 (BPAI 2007). As stated in *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006), there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.

An obviousness determination also requires that a skilled artisan would have perceived a reasonable expectation of success. See *In re O'Farrell*, 853 F.2d 894, 903-04 (Fed. Cir. 1988); also see *Dystar Textilfarben GmbH v. C.H. Patrick Co.*, 464 F.3d 1356, 1360 (Fed. Cir. 2006). **However, to have a**

reasonable expectation of success, one must do more than merely vary all parameters or try each of numerous possible choices until one possibly arrived at a successful result.

The prior art fails to provide the requisite reasonable expectation of success where it teaches merely to pursue a general approach that seems to be a promising field of experimentation, and where the prior art gives only general guidance as to the particular form of the claimed invention or how to achieve it. See *O'Farrell* at 903-904. The expectation of success must be founded in the prior art, not in the applicant's disclosure. *In re Dow Chem. Co.*, 837 F.2d 469, 473 (Fed. Cir. 1988).

Combining known prior art elements is not sufficient to render a claimed invention obvious if the results would not have been predictable to one of ordinary skill in the art. See *U.S. v. Adams*, 383 U.S. 39, 51 - 52 (1966). Further, it is the teachings of the prior art which provide the basis for the reasonable expectation of success. See *In re Merck & Co., Inc.*, 800 F.2d 1091 (Fed. Cir. 1986).

Additionally, an obviousness rejection may not be based on speculation, conjecture or surmise. See *In re Sporck*, 301 F.2d 686, 690 (CCPA 1962); also see *In re Warner*, 379 F.2d 1011, 1017 (CCPA 1967) ("where the legal conclusion [of obviousness] is not supported by facts, it cannot stand."). Thus assumptions as to common sense or what is known in the art cannot substitute for evidence thereof. See *In re Lee*, 277 F.3d 1338, 1345 (Fed. Cir. 2002); also see *In re Zurko*, 258 F.3d 1379, 1383, 1385 (Fed. Cir. 2001).

(2) Non-analogous Art

Whether a reference is analogous art is a question of fact. See *Jurgens v. McKasy*, 927 F.2d 1552, 1558 (Fed. Cir. 1991). Two criteria have evolved for answering the question: (1) whether the art is from the same field of endeavor, regardless of the problem addressed, and (2) if the reference is not within the field of the inventor's endeavor, whether reference still is reasonably pertinent to the particular problem with which the inventor is involved. See *In re Clay*, 966 F.2d 656, 658 - 59 (Fed. Cir. 1992).

(b) Patentability of Claims 1, 13, and 14

The primary reference, U.S. Patent No. 2,663,185 to Broschke, applied by the Examiner is directed to a hardness tester having a weightable indenter positioned above a specimen, a holder carrying the indenter, and supporting elements, namely leaf springs, each attached to the holder at a point spaced vertically from its attachment to the indenter and displaceable sidewise between its attachment to the indenter and to the holder respectively. The holder contains a diamond. There is no discussion of how the diamond is fastened within the holder or how the diamond is oriented to the tip. While the Examiner assumes that the diamond is fastened to an end of the holder, the actual mounting is neither discussed nor shown in the drawings. Thus, the Examiner has erroneously assumed that the diamond stone is affixed to a tip end. Further, there is no disclosure in Broschke of affixing the diamond stone to the tip end by a braze material as called for by claim 1. There is no discussion in Broschke of the orientation of the diamond stone.

The Examiner then cites the Shah declaration as disclosing that the <17, 12, 24> direction is inherent in a diamond stone. There are a number of problems with this so-called admitted prior art. The Shah declaration was specially created to discuss the invention in this case. Since it does not have a date earlier than the filing date of this case, it can not possibly be prior art. With regard to Figure 1 in the Shah declaration, this figure merely describes the direction which forms part of the claimed invention, nothing more. The present invention has to do with mounting a diamond stone to a tip end of a shank within 8 degrees of a <17, 12, 24> direction. The Shah declaration and particularly Figure 1 does not admit this to be in the prior art.

The Examiner then cites the Batsch and Kobayashi references as teaching that it is well known to one skilled in the art to find directions in a diamond that has high and low wear resistant properties so that the diamond can be shaped accordingly. Applicant is compelled to point out that this is the type of general teaching that does not provide any reasonable expectation of success. Thus, these references could not possibly render the claimed invention obvious because they provide no guidance to the person of skill in the art as to where to start and what would be a beneficial orientation of the diamond. Given the fact that there are an infinite number of vectors within any diamond stone, the logical starting point would be nothing more than guesswork given the absence of guidance by Batsch and/or Kobayashi. Batsch and Kobayashi could not possibly render the claimed invention obvious under the existing case law because they provide no predictable results.

The Batsch patent is directed to a diamond stylus for disc records and thus on its face non-analogous art. The stylus in the Batsch patent is not used to form indents in a structure. Thus, Batsch is not within the same field of endeavor as the claimed invention or Broschke. In fact, the stylus in Batsch operates within a pre-existing rotating groove. As a result, it is subjected to different stresses and wear properties. Thus, one of skill in the art would recognize that it is not directed to the same problems which are being faced by Applicant. Since it is non-analogous art, one of ordinary skill in the art would not combine the references in the manner suggested by the Examiner.

The best example that Batsch is not directed to the same problem as Applicant is that he uses much different crystallographic orientations than those used by Applicant and set forth in the claims. Thus, assuming one of ordinary skill in the art would somehow follow the teachings of Batsch, one would be lead away from the claimed invention. There is absolutely nothing in Batsch which would lead one to use the claimed orientation.

With regard to Kobayashi, it too is non-analogous art. It is directed to a diamond dresser which is used to adjust a grindstone. Thus, it is not in the same field of endeavor as Applicant's invention or Broschke. It is submitted that the wear concerns of this device are far different from the wear concerns of Applicant's tool. This is again best demonstrated that Kobayashi uses crystallographic orientations which are quite different from those set forth in the claims. There is absolutely nothing in Kobayashi which would lead one of skill in the art to the claimed invention.

In other words, neither Batsch nor Kobayashi get the point of the present invention. In fact, they teach away from the claimed invention. Since they teach away from the claimed invention, one of ordinary skill in the art would not combine them in the manner suggested by the Examiner and arrive at the claimed invention.

With respect to the Ziegel patent, it does not cure the above noted errors of the other cited references.

The Examiner reaches the conclusion of obviousness by saying that since the <17, 12, 24> direction is inherent (and the Examiner has not established this point for all diamonds), it would have been obvious to one skilled in the art at the time the invention was made to do repeated experiments as taught by Batsch and Kobayashi and shape the diamond tip accordingly so that the diamond tip has a high wear resistant property. The Examiner errs because the Examiner has not applied the proper law. As noted above, **to have a reasonable expectation of success, one must do more than merely vary all parameters or try each of numerous possible choices (in this case an infinite number of possible choices) until one possibly arrived at a successful result.** The prior art references fail to provide the requisite reasonable expectation of success because they merely teach (by the Examiner's own admission) to pursue a general approach that seems to be a promising field of experimentation. Further, the prior art gives only general guidance as to the particular form of the claimed invention and how to achieve it which is insufficient to establish obviousness. See *O'Farrell* at 903-904. The expectation of success must be founded in the prior art, not in the applicant's disclosure. *In re Dow Chem. Co.*, 837 F.2d 469, 473 (Fed. Cir. 1988). The Examiner has failed to show any

reasonable expectation of success which flows from the cited and applied prior art. There is absolutely nothing in the cited and applied prior art which would lead one to orient the diamond stone within 8 degrees of the <17, 12, 24> direction because the references provide no guidance as to what the wear resistance properties should be for a tool of the type claimed.

For these reasons, claims 1, 13, and 14 are patentable over the cited and applied prior art.

(c) Patentability of claims 2 - 10 and 12

With regard to claims 2 - 10 and 12, these claims are allowable for the same reasons as their parent claims as well as on their own accord. With regard to claim 2, the mere fact that something is known in the prior art is insufficient to establish obviousness. The Examiner has failed to provide any articulated line of reasoning why one of ordinary skill in the art would select steel from all the potential candidates and use it in Kobayashi. With regard to claim 6, the Examiner has failed to point out where either Batsch or Kobayashi teach or suggest using a diamond which is a single crystal diamond which is nearly free of defects. With regard to claim 7, the Examiner has not presented any reason why Broschke would want to use a synthetic diamond. With regard to claim 8, it is not clear which Figure 1 the Examiner is referencing. Again, Figure 1 in the Shah declaration is not prior art. With respect to claim 9, the prior art fails to show the claimed feature. The burden of the Examiner is to find the claimed subject matter in the prior art and then set forth a reason why one would use it. With regard to claim 10, the Examiner makes an erroneous assumption as to the state of knowledge in

the prior art. There is no evidence of record to support the statement that one of ordinary skill in the art would have expected Applicant's invention to perform equally well with the 120 degree angle conical point. See *Lee*, 277 F.3d at 1345. As for Figure 5, there is nothing in Broschke that says Figure 5 is drawn to scale. Thus, the Examiner can not rely upon it to show the claimed subject matter. With respect to claim 12, there is no disclosure that the tip end of the shank is tapered. The point shown there is the diamond 11.

With regard to the Examiner's comments in paragraph 3 of the action, in order to provide a reasonable expectation of success, one of the prior art references must suggest a starting point. In the rejection at hand, none of the prior art references suggest any orientation for mounting the diamond stone to the tip end of the tool. To then say the claimed invention is obvious because one can perform an infinite number of tests to arrive at the claimed direction is contrary to the existent case law. In order to determine the claimed direction is the best, one of ordinary skill in the art needs a standard somewhere in the prior art. None of the cited and applied references provide the necessary standard or starting point. Using the references at hand, one of ordinary skill in the art would have to perform an infinite number of tests without knowing what they are looking for. Applicant submits that if one has to an infinite number of tests, then the results set forth in the claim are unpredictable - no one can say an infinite number of tests is reasonable.

With regard to the Examiner's argument that Broschke, Batsch and Kobayashi are analogous art, the Examiner's position is in error. Applicant is not concerned with shaping a diamond at certain planes to increase the structural strength of the

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diamond. Applicant is concerned with how the diamond's crystal is oriented to achieve a wear-resistant indenting performance. None of the aforementioned references are directed to solving this problem. Thus, the references do not meet either the first prong or the second prong of the *Oetiker* test.

For the foregoing reasons, the instant application is condition for allowance. Such allowance is respectfully solicited.

Should the Examiner believe an additional amendment is needed to place the case in condition for allowance, the Examiner is hereby invited to contact Applicant's attorney at the telephone number listed below.

No fee is believed to be due as a result of this response. Should the Director determine that a fee is due, he is hereby authorized to charge said fee to Deposit Account No. 21-0279.

Respectfully submitted,

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